2010 - 0108

National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

June 28, 2010

Reply to Attn of: Office of International & Interagency Relations

Mr. Chris de Cooker
Head, International Relations Department
European Space Agency
8-10, rue Mario-Nikis
75738 Paris Cedex 15
France

Dear Mr. de Cooker:

Thank you for your letter dated June 22, 2010, concerning continued cooperation between ESA and NASA in the joint exploration of Mars, initially focusing on the 2016 and 2018 launch opportunities, while leading to an ongoing cooperative program.

NASA agrees with the terms and conditions as outlined in your letter. Consequently, I acknowledge that your letter, together with this affirmative reply, shall constitute an agreement between ESA and NASA on the exploration of Mars in the 2016 and 2018 mission opportunities, with the interest in building an ongoing program.

Sincerely,

Karen Feldstein
Director (Acting), Science Division
Office of International and Internagency Relations

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Karen Feldstein
Director (Acting)
Science Division
Office of International and Interagency Relations
NASA Headquarters
300 E St., SW
Washington, DC 20546

Paris, 22 June 2010

Dear Mrs. Feldstein,

On 21 March 2008, the European Space Agency (ESA) and the United States National Aeronautics and Space Administration (NASA) concluded an agreement on cooperation on the ExoMars mission, by means of an Exchange of Letters (hereinafter the "2008 Agreement"). The 2008 Agreement expired on 31 December 2009. Meanwhile, ESA and NASA have expressed a mutual interest in continuing the cooperation established by the 2008 Agreement while revising the scope of the cooperation. As envisaged, the revised cooperation on the robotic exploration of Mars would span several launch opportunities (i.e., launch windows), initially focusing on 2016 and 2018, with landers and orbiters conducting astrobiological, geological, climatological, and other high-priority investigations.

Programmatic goals, technological advances, and available budgets will be assessed to determine the mission architecture and potential contributions of each agency to the envisioned cooperative missions.

The missions

NASA and ESA have begun studying the 2016 and 2018 missions to meet the goals of each agency that have been defined over the past several years: ESA's in terms of the ExoMars mission concept, which includes landing, drilling, and roving technology development; and NASA's in terms of a trace gas mapping and imaging mission concept that would also replenish the communications infrastructure at Mars to support future missions, followed by a surface roving mission with the capability of characterizing and caching Martian astrobiological/geological samples for potential retrieval.

The 2016 mission, under ESA lead, would involve an orbiter provided by ESA and launched to Mars by NASA. The orbiter would provide orbital science in mapping trace gases, communications relay operations and demonstration of key technologies for a hyperbolic entry, descent, and semi-soft landing system (EDLS) with limited mass and surface lifetime. The opportunity would be used to land a scientific payload

within the limited resources available in the EDLS. ESA would conduct operations of the spacecraft during all phases of the mission. NASA would be responsible for launch operations and for the science operations of its payload, with relay and aerobraking operations jointly performed with ESA.

The 2018 mission, under NASA lead, would include the ExoMars rover provided by ESA, including scientific payloads and drilling capabilities. NASA would provide, as a minimum, the Atlas V-class launch vehicle, a rover, the "Sky Crane" EDLS, accommodation for the ESA ExoMars rover in addition to NASA's own rover, and Radioisotope Heater Units for the ExoMars rover. NASA would conduct the launch approval process and associated launch, cruise, and EDL operations. NASA would also be responsible for the surface operations of its rover and ESA would be responsible for the surface operations of the ExoMars rover. ESA and NASA would jointly select the landing site and coordinate surface science operations.

Purpose of the present letter

The purpose of the present letter is to establish an Agreement (hereinafter "Agreement") between ESA and NASA (hereinafter "the Parties") confirming their intention to continue the cooperation on the robotic exploration of Mars that began with the 2008 Agreement, while revising the scope of the earlier cooperation, which will now encompass two missions as described above.

Bearing in mind the requirements stemming from the implementation of their respective programmes, it is the intention of the Parties to expeditiously develop a Memorandum of Understanding (MoU) that will cover in a detailed manner specific, agreed-upon mission activities in each opportunity, or across opportunities, including relevant management structures and provisions on the Parties' rights in, and responsibilities for, distribution of scientific data.

Under this Agreement, the Parties will pursue their cooperation on the robotic exploration of Mars according to the provisions below:

Activities of the Parties under this Agreement

To implement the present cooperation pursuant to this Agreement, the Parties will use all reasonable efforts to:

(a) cooperate on the further definition and development of mission concepts, mission requirements and implementation approaches for each of the mission opportunities;
(b) issue and support a joint Announcement of Opportunity (AO) for selection of instrumentation on the 2016 mission;
(c) establish joint working groups to examine relevant issues and appoint representatives to participate therein;
(d) appoint representatives to participate in the deliberation of working groups and reviews established by the other Party to examine relevant issues;

(e) establish a joint program architecture review team and appoint representatives to participate therein;
(f) consult and collaborate in public education and outreach activities associated with the joint robotic exploration of Mars;
(g) organise workshops and experts meetings on the robotic exploration of Mars;
(h) exchange reports and documents relevant to the definition and implementation of the joint robotic exploration of Mars, including industry studies, design models and scientific reports, and flight project documents specific to each of the mission concepts; and
(i) facilitate short- and long-term placements of personnel from ESA and NASA, or from institutions associated with the Parties' activities pursuant to this Agreement, as agreed on a case-by-case basis, to one another's facilities to participate in, confer with, and advise their counterparts on relevant issues.

Points of Contact

The following Points of Contact have been designated to enable both NASA and ESA to take the necessary steps to formalise their intended cooperation on the robotic exploration of Mars:

(a) for NASA: Doug McCuistion

(b) for ESA: Marcello Coradini

Any change in the Parties' respective Points of Contact, or in the corresponding details, will be communicated in writing by the Party making such change to the other Party.

Planetary Protection

The Parties will conduct their activities pursuant to this Agreement in accordance with the prescriptions of their respective planetary protection policies, consistent with the corresponding policies promulgated by the Committee on Space Research (COSPAR) and the applicable implementing requirements and guidelines.

Definitions

For the purpose of this Agreement,

1. The term "Related Entity" means:

(a) a contractor, subcontractor, or sponsored entity of a Party at any tier;
(b) a user or customer of a Party at any tier;
(c) a contractor or subcontractor of a user or customer or sponsored entity of a Party at any tier; or
(d) a scientific investigator.

The terms "contractor" and "subcontractor" include suppliers of any kind.

Without prejudice to the detailed provisions contained in this Agreement, each Party will, by contract or otherwise, extend the obligations intended for its Related Entities, as set forth in this Agreement, to the said Related Entities.

2. The term "damage" means:

   (a) bodily injury to, or other impairment of health of, or death of, any person;
   (b) damage to, loss of, or loss of use of any property;
   (c) loss of revenue or profits; or
   (d) other direct, indirect, or consequential damage.

3. The term "launch vehicle" means an object or any part thereof intended for launch, launched from Earth, or returning to Earth which carries payloads or persons, or both.

4. The term "payload" means all property to be flown or used on or in a launch vehicle.

5. The term "Protected Space Operations" means all activities pursuant to this Agreement, including launch vehicle activities and payload activities on Earth, in outer space, or in transit between Earth and outer space. "Protected Space Operations" begin at the entry into force of this Agreement and end when all activities done in implementation of this Agreement are completed. The term includes, but is not limited to:

   (a) research, design, development, test, manufacture, assembly, integration, operation, or use of launch or transfer vehicles, payloads, or instruments, as well as related support equipment and facilities and services;
   (b) all activities related to ground support, test, training, simulation, or guidance and control equipment and related facilities or services.

   The term "Protected Space Operations" excludes activities on Earth that are conducted on return from space to develop further a payload's product or process for use other than for the ExoMars mission.

Financial Arrangements

Each Party will bear the costs of discharging its respective responsibilities, including travel and subsistence of personnel and transportation of all equipment and other items for which it is responsible. The ability of the Parties to carry out their obligations is subject to the availability of appropriated funds. Should either Party encounter budgetary problems that may affect the activities to be carried out under this Agreement, the Party encountering the problems will notify and consult with the other Party as soon as possible and will take appropriate steps to minimise any negative impact of the budgetary problem on the other Party.

Release of Results and Public Information

1. The Parties retain the right to release public information regarding their own activities under this Agreement. The Parties will coordinate with each other in advance concerning releasing to the public information that relates to the other Party's responsibilities or performance under this Agreement.

2. The Parties will make the results available to the general scientific community, as appropriate.

3. The Parties acknowledge that the following data or information does not constitute public information and that such data or information will not be included in any publication or presentation by a Party under this clause without the other Party's prior written permission:

   (a) data furnished by the other Party in accordance with the Transfer of Goods and Technical Data clause of this Agreement which is export-controlled, classified, or proprietary; or
   (b) information about an invention of the other Party before an application for a patent (or similar form of protection in any country) corresponding to such invention has been filed covering the same, or a decision not to file has been made.

Intellectual Property

1. Nothing in this Agreement shall be construed as granting, either expressly or by implication, to the other Party any rights to, or interest in, any inventions or works of a Party or its Related Entities made prior to the entry into force of, or outside the scope of, this Agreement, including any patents (or similar forms of protection in any country) corresponding to such inventions or any copyrights corresponding to such works.

2. Any right to, or interest in, any invention or work made in the performance of this Agreement solely by one Party or any of its Related Entities, including any patents (or similar forms of protection in any country) corresponding to such invention or any copyright corresponding to such work, shall be owned by such Party or Related Entity. Allocation of rights to, or interest in, such invention or work between such Party and its Related Entities shall be determined by applicable laws, rules, regulations, and contractual obligations.

3. It is not anticipated that there will be any joint inventions made in the performance of this Agreement. Nevertheless, in the event that an invention is jointly made by the Parties in the performance of this Agreement, the Parties shall, in good faith, consult and agree within 30 calendar days as to:

(a) the allocation of rights to, or interest in, such joint invention, including any patents (or similar forms of protection in any country) corresponding to such joint invention;
(b) the responsibilities, costs, and actions to be taken to establish and maintain patents (or similar forms of protection in any country) for each such joint invention; and
(c) the terms and conditions of any license or other rights to be exchanged between the Parties or granted by one Party to the other Party.

4. For any jointly authored work, should the Parties decide to register the copyright in such work, they shall, in good faith, consult and agree as to the responsibilities, costs, and actions to be taken to register copyrights and maintain copyright protection (in any country).

5. Subject to the provisions of the clauses on Transfer of Goods and Technical Data and on the Release of Results and Public Information, each Party shall have an irrevocable royalty-free right to reproduce, prepare derivative works, distribute, and present publicly, and authorise others to do so on its behalf, any copyrighted work resulting from activities undertaken in the performance of this Agreement for its own purposes, regardless of whether the work was created solely by, or on behalf of, the other Party or jointly with the other Party.

Transfer of Goods and Technical Data

The Parties are obligated to transfer only those goods and technical data (including software) necessary to fulfil their respective responsibilities under this Agreement, in accordance with the following provisions, notwithstanding any other provision of this Agreement:

1. All activities of the Parties will be carried out in accordance with applicable laws, rules, and regulations pertaining to export control and the control of classified information.

2. The transfer of goods and technical data for the purpose of discharging the Parties' responsibilities with regard to interface, integration, and safety will normally be made without restriction, except as provided in paragraph 1 above.

3. All transfers of export-controlled goods and proprietary or export-controlled technical data are subject to the following provisions. In the event a Party or its Related Entity finds it necessary to transfer export-controlled goods or to transfer proprietary or export-controlled technical data, for which protection is to be maintained, such goods will be specifically identified and such technical data will be marked with a notice. The identification for such goods and the marking of such technical data will indicate that the goods and technical data will be used by the receiving Party or its Related Entities only for the purposes of fulfilling the receiving Party's or Related Entity's responsibilities under this Agreement, and that the identified goods and marked technical data will not be disclosed or retransferred to any other entity without the prior written

permission of the furnishing Party or its Related Entity. The receiving Party or Related Entity will abide by the terms of the notice and protect any such identified goods or marked technical data from unauthorized use and disclosure. The Parties to this Agreement will cause their Related Entities to be bound by the provisions of this clause related to use, disclosure, and retransfer of identified goods and marked technical data through contractual mechanisms or equivalent measures.

4. All goods and marked proprietary or export-controlled technical data exchanged in the performance of this Agreement will be used by the receiving Party or Related Entity exclusively for the purposes of this Agreement. Upon completion of the activities under this Agreement, the receiving Party or Related Entity will return or, at the request of the furnishing Party or its Related Entity, otherwise dispose of all goods and marked proprietary or export-controlled technical data provided under this Agreement.

Liability

1. The Parties agree that a comprehensive cross-waiver of liability between the Parties and their Related Entities shall further participation in space exploration, use, and investment. The cross-waiver of liability shall be broadly construed to achieve this objective. The terms of the cross-waiver are set out below.

2. (a) Each Party agrees to a cross-waiver of liability pursuant to which each Party waives all claims against the other Party, the other Party's Related Entities, employees of the other Party, and employees of the other Party's Related Entities, based on Damage arising out of Protected Space Operations. This cross-waiver shall apply only if the person, entity, or property causing the damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations. The cross-waiver shall apply to any claims for damage, whatever the legal basis for such claims.

   (b) Each Party shall extend the cross-waiver of liability to its own Related Entities by requiring them, by contract or otherwise, to agree to waive all claims, and require that their Related Entities waive all claims, against the other Party, the other Party's Related Entities, and employees of the other Party or its Related Entities, based on damage arising out of Protected Space Operations.

   (c) For avoidance of doubt, this cross-waiver of liability includes a cross-waiver for any liability arising from the Convention on International Liability for Damage Caused by Space Objects, which entered into force on 1 September 1972 (hereinafter referred to as the "Liability Convention"), where the person, entity, or property causing the damage is involved in Protected Space Operations and the person, entity, or property damaged is damaged by virtue of its involvement in Protected Space Operations.

(d) Notwithstanding the other provisions of this clause, this cross-waiver of liability shall not be applicable to:

(i) claims between a Party and its own Related Entity or among its own Related Entities;
(ii) claims made by a natural person, his/her estate, survivors, or subrogees (except when a subrogee is a Party to this Agreement or is otherwise bound by the terms of this cross-waiver) for bodily injury, other impairment of health, or death of such natural person;
(iii) intellectual property claims; or
(iv) claims for damage caused by willful misconduct.

(e) This cross-waiver of liability shall not apply to performance of the Parties' obligations under this Agreement.

(f) Nothing in this clause shall be construed to create the basis for a claim or suit where none would otherwise exist.

(g) In the event of third-party claims which may arise out of, *inter alia*, the Liability Convention, the Parties shall consult promptly on any potential liability, on any apportionment of such liability, and on the defense of such claim.

Customs Clearance and Movement of Persons and Goods Facilitation

In accordance with applicable laws and regulations, each Party will facilitate, on a fully reciprocal basis, free customs clearance and waiver of all applicable customs duties and taxes for equipment and related goods necessary for the implementation of this Agreement. In the event that any customs duties or taxes of any kind are nonetheless levied on such equipment and related goods, such customs duties or taxes will be borne by the Party related to the authority levying them.

Each of the Parties will also facilitate the movement of persons and goods into and out of the corresponding territory as necessary to carry out activities pursuant to this Agreement in accordance with applicable laws and regulations.

Ownership of Equipment

Unless otherwise agreed between the Parties, all equipment transferred by the Parties under this Agreement shall remain the property of the originating Party. Each Party shall return any of the other Party's equipment in its possession to the other Party once the purpose of the transfer is achieved.

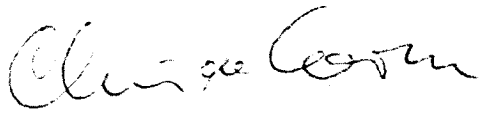
Consultation and Dispute Resolution

If an issue concerning the interpretation or implementation of this Agreement submitted by either Party to the other is not resolved through consultation conducted under the appropriate level of authority of the Parties and still needs to be resolved, the Parties may agree to submit the dispute to an agreed-upon form of dispute resolution.

Entry Into Force and Termination

If the above terms and conditions are acceptable to NASA, I propose that this letter, together with your affirmative reply, shall constitute an agreement between ESA and NASA, which will enter into force on the date of NASA's affirmative reply. It will remain in force until 31 December 2012. This Agreement may be amended or extended at any time by mutual written agreement of the Parties and may be terminated by either Party after at least six months advance written notification of intent to terminate. The obligations of the Parties set forth in this Agreement concerning Liability; Intellectual Property; Transfer of Goods and Technical Data; and Customs Clearance, will continue to apply after the expiration or termination of this Agreement.

Yours sincerely,



Chris de Cooker
Head of the International Relations Department